

D-HR Series

High Insulation Resistance, High Voltage Relays - 5kV, 7.5kV, 10kV & 15kV



- 5kV, 7.5kV, 10kV or 15kV Isolation
- Low Contact Resistance
- 1×10^{14} Ohms Minimum Insulation Resistance
- PCB or Flying Lead Connections
- Ideal for sensitive test and measurement circuits which require low leakage current losses

Contact Specification			Unit Condition		5kV SPNO		5kV SPNC		7.5kV SPNO		7.5kV SPNC		10kV SPNO		10kV SPNC		15kV SPNO*	
Contact Material					Rhodium	Tungsten	Rhodium	Tungsten	Rhodium	Tungsten	Rhodium	Tungsten	Rhodium	Tungsten	Rhodium	Tungsten	Tungsten	
Isolation across contacts		kV	DC or AC peak	5	5	5	5	7.5	7.5	7.5	7.5	10	10	10	10	15		
Switching Power Max.		W		50	50	50	50	50	50	50	50	50	50	50	50	50		
Switching Voltage Max.		V	DC or AC peak	1000	3500	1000	3500	1000	5000	1000	5000	1000	7000	1000	7000	10000		
Switching Current Max.		A	DC or AC peak	3	2	3	2	3	2	3	2	3	2	3	2	2		
Carry Current Max		A	DC or AC peak	4	3	4	3	4	3	4	3	4	3	4	3	2		
Capacitance across contacts		pF	coil to screen grounded	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		
Lifetime	Operations	dry switching		10 ⁹	10 ⁹	10 ⁹	10 ⁹	10 ⁹	10 ⁹	10 ⁹	10 ⁹	10 ⁹	10 ⁹	10 ⁹	10 ⁹	10 ⁹		
			50W switching		10 ⁶	10 ⁶	10 ⁶	10 ⁶	10 ⁶	10 ⁶	10 ⁶	10 ⁶	10 ⁶	10 ⁶	10 ⁶	10 ⁶		
Contact Resistance		mΩ	max (typical)	50(15)	250(100)	50(15)	250(100)	50(15)	250(100)	50(15)	250(100)	50(15)	250(100)	50(15)	250(100)	250 (100)		
Insulation Resistance		Ωmin		1x10 ¹⁴	1x10 ¹⁴	1x10 ¹⁴	1x10 ¹⁴	1x10 ¹⁴	1x10 ¹⁴	1x10 ¹⁴	1x10 ¹⁴	1x10 ¹⁴	1x10 ¹⁴	1x10 ¹⁴	1x10 ¹⁴	1x10 ¹⁴		
Coil Specification				5V	12V	24V	5V	12V	24V	5V	12V	24V	5V	12V	24V	5V	12V	24V
Must Operate Voltage		V	DC	3.7	9	20	3.7	9	20	3.7	9	20	3.7	9	20	3.7	9	20
Must Release Voltage		V	DC	0.5	1.25	4	0.5	1.25	4	0.5	1.25	4	0.5	1.25	4	0.5	1.25	4
Operate Time		ms	diode fitted	3.0	3.0	3.0	2.0	2.0	2.0	3.0	3.0	3.0	2.0	2.0	2.0	3.0	3.0	3.0
Release Time		ms	diode fitted	2.0	2.0	2.0	3.0	3.0	3.0	2.0	2.0	2.0	3.0	3.0	3.0	2.0	2.0	2.0
Resistance		Ω		28	150	780	38	240	925	28	150	780	38	240	925	28	150	780
Note: The operate / release voltage and coil resistance will change at a rate of 0.4% per degree C. Values are stated at room temperature (20 degrees C)																		
Relay Specification																		
Isolation contact/coil		kV		17														
Insulation resistance contact to all terminals		Ωmin (typical)		1x10 ¹⁴														
Environmental																		
Operating Temp range		°C		-20 to +70														

Please refer to this document for circuit design notes:-
<http://www.cynergy3.com/blog/application-notes-reed-relays-0>

Very high isolation voltages - up to 15kV - are achieved through the use of high vacuum reed switches with either rhodium or tungsten contacts which make these relays suitable for high reliability applications, such as cardiac defibrillators, test equipment and high voltage power supplies.

The rhodium contact relays have low contact resistance, while the tungsten contact relays can switch higher voltages.

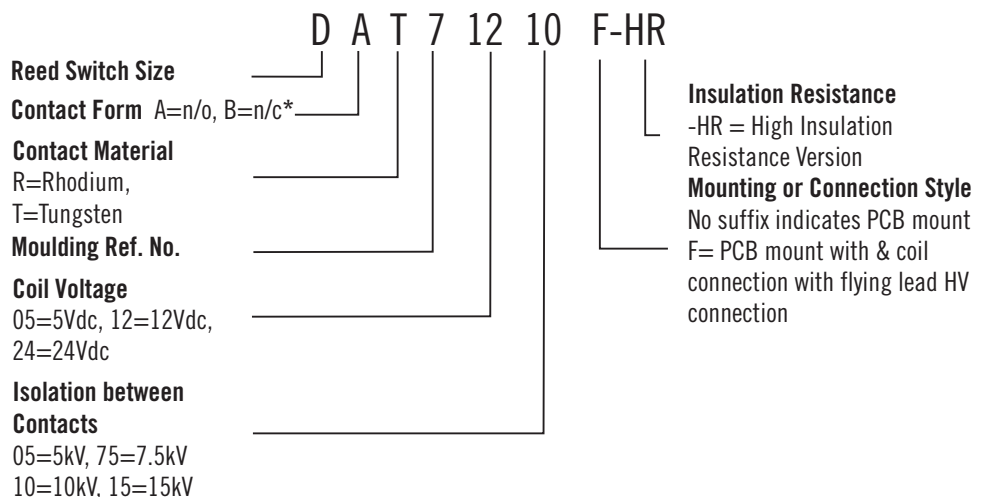
Cynergy3 Components Ltd.
 7 Cobham Road
 Ferndown Industrial Estate
 Wimborne, Dorset BH21 7PE
 Telephone +44 (0) 1202 897969
 Email: sales@cynergy3.com

ISO9001 CERTIFIED

D-HR 2019



Part Numbering System



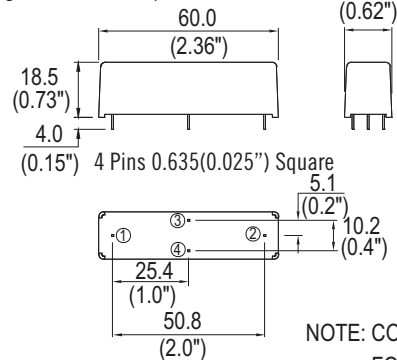
* Form B (n/c) is not available on 15kV models

www.cynergy3.com

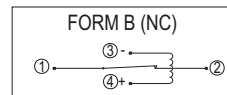
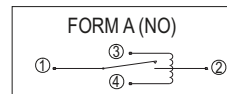
MECHANICAL

STANDARD

(e.g. DAT71210-HR)



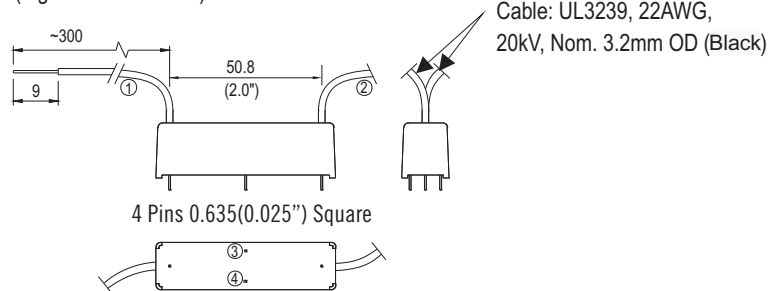
CIRCUIT DIAGRAMS (ALL VARIANTS)



NOTE: COIL POLARITY IS IMPORTANT
FOR FORM B VARIANT ONLY.

FLYING LEAD

(e.g. DAT71210F-HR)



NOTE: PINS WHICH ARE NOT NUMBERED
HAVE NO ELECTRICAL CONNECTION.

Cynergy3 Components Ltd.
7 Cobham Road
Ferndown Industrial Estate
Wimborne, Dorset BH21 7PE
Telephone +44 (0) 1202 897969

Email: sales@cynergy3.com

Please refer to this document for circuit design notes:-
<http://www.cynergy3.com/blog/application-notes-reed-relays-0>

ISO9001 CERTIFIED

www.cynergy3.com

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Sensata:

[DAR70505F-HR](#) [DAR70505-HR](#) [DAR70510-HR](#) [DAR70575F-HR](#) [DAR70575-HR](#) [DBT72405-HR](#) [DBT72410-HR](#)
[DBT72475F-HR](#) [DBT72475-HR](#) [DBT71205-HR](#) [DBT71210-HR](#) [DBT71275F-HR](#) [DBT71275-HR](#) [DBT70505-HR](#)
[DBT70510-HR](#) [DBT70575-HR](#) [DBR72405F-HR](#) [DBR72405-HR](#) [DBR72410-HR](#) [DBR72475F-HR](#) [DBR72475-HR](#)
[DBR71205F-HR](#) [DBR71205-HR](#) [DBR71210-HR](#) [DBR71275F-HR](#) [DBR71275-HR](#) [DBR70505F-HR](#) [DBR70505-HR](#)
[DBR70510-HR](#) [DBR70575F-HR](#) [DBR70575-HR](#) [DAT72410-HR](#) [DAT72415-HR](#) [DAT72475F-HR](#) [DAT72475-HR](#)
[DAT71215-HR](#) [DAT71275-HR](#) [DAT72405F-HR](#) [DAT72405-HR](#) [DAT70575F-HR](#) [DAT70575-HR](#) [DAT71205-HR](#)
[DAT71210-HR](#) [DAT70505F-HR](#) [DAT70505-HR](#) [DAT70510-HR](#) [DAT70515-HR](#) [DAR72405F-HR](#) [DAR72405-HR](#)
[DAR72410-HR](#) [DAR72475F-HR](#) [DAR72475-HR](#) [DAR71205F-HR](#) [DAR71205-HR](#) [DAR71210-HR](#) [DAR71275F-HR](#)
[DAR71275-HR](#)